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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,674	11/30/2001	Chanchal Chatterjee	018926-008900US	8670
20350	7590	10/05/2004	EXAMINER	
TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			DO, CHAT C	
			ART. UNIT	PAPER NUMBER
			2124	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/010,674	CHATTERJEE, CHANCHAL	
	Examiner	Art Unit	
	Chat C. Do	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/30/01;3/5/02;5/7/02;5/8/02.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,15-18 and 28-33 is/are rejected.
- 7) ☒ Claim(s) 4-14, 19-27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/7/02</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 4-5, 7, 11, and 15 are objected to because of the following informalities:

Re claim 4, the applicant is advised to address the symbol “%” in line 2 as modulo for clarification.

Re claim 5, the applicant is advised to write the word “DCT” in line 1 in full as “Discreted Cosine Transform

Re claim 7, the applicant is advised to address the symbol “>>” in line 1 at least once as right shift for clarification.

Re claim 11, the applicant is advised to amend the phrase “X is the maximum of zero and $(X' - Q/2)$ ” in lines 1-2 as “X is the maximum of zero and difference of X' and $Q/2$ ($X = \max \{0, X' - Q/2\}$)” for clarification.

Re claim 15, the applicant is advised to write the word “the pavgw instruction” in line 2 in full for clarification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2124

3. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 15, the limitation "the pavgw instruction" in line 2 lacks an antecedence basis. For examination purposes, the examiner considers the limitation "a pavgw instruction" as any instruction.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 16-18, 28, and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Wheeler et al. (U.S. 5,825,680).

Re claim 1, Wheeler et al. disclose in Figures 1, 3A-3B, and 10 a method in a signal processor for quantizing a digital signal (444 in Figure 3B), the method comprising: generating a fixed-point approximation of a value X/D (e.g. X is 432 and D is 434 in Figure 3A), wherein X is a fixed-point value based on one or more samples in the digital signal (e.g. 430 in Figure 3A and 442 in Figure 3B), and wherein D is a fixed-point quantization parameter (e.g. 434 in Figure 3A as 8, 16, ...), generating a correction (1520 in Figure 10); and modifying the approximation with the correction (output of 1520 as updated quotient in Figure 10).

Re claim 2, Wheeler et al. further disclose in Figures 1, 3A-3B, and 10 generating the approximation includes multiplying X by D' , wherein D' is $2^n/D$, wherein n is a positive integer such that $2^n > D$ (col. 18 lines 59 and 64).

Re claim 3, Wheeler et al. further disclose in Figures 1, 3A-3B, and 10 n is selected from a group consisting of 8, 16, 32, 64 and 128 (col. 18 lines 59 and 64).

Re claim 16, Wheeler et al. further disclose in Figures 1, 3A-3B, and 10 including: generating X, wherein $X = 16 * \text{ABS}(X')$ (col. 18 lines 59 and 64), wherein X' is a fixed-point value based on a DCT coefficient (output of 442 in Figure 3B), and wherein D is a quantization step (434 in Figure 3A).

Re claim 17, Wheeler et al. further disclose in Figures 1, 3A-3B, and 10 including: generating X, wherein $X = 32 * \text{ABS}(X')$ (col. 18 lines 59 and 64), wherein X' is a fixed-point value based on a DCT coefficient (output of 442 in Figure 3B), and wherein D is a quantization step (434 in Figure 3A).

Re claim 18, Wheeler et al. further disclose in Figures 1, 3A-3B, and 10 generating X includes generating $X'' = 16 * \text{ABS}(X')$ (col. 18 lines 59 and 64).

Re claim 28, Wheeler et al. further disclose in Figures 1, 3A-3B, and 10 X is based on a DCT coefficient (output of 442 in Figure 3B).

Re claim 30, Wheeler et al. further disclose in Figures 1, 3A-3B, and 10 X is based on a sample of a communications signal (col. 1 lines 18-27).

Re claim 31, it is a computer program product claim of claim 1. Thus, claim 31 is also rejected under the same rationale as cited in the rejection of rejected claim 1.

Re claim 32, it is a system claim of claim 1. Thus, claim 32 is also rejected under the same rationale as cited in the rejection of rejected claim 1.

Re claim 33, Wheeler et al. further disclose in Figures 1, 3A-3B, and 10 a method in a signal processor for quantizing a digital signal (444 Figure 3B), the method comprising: generating a fixed-point approximation $X1$ of a value X/W (e.g. X is 432 and D is 434 in Figure 3A), wherein X is a fixed-point value based on one or more samples in the digital signal (e.g. 430 in Figure 3A and 442 in Figure 3B), and wherein W is a first fixed-point quantization parameter (e.g. 434 in Figure 3A as 8, 16, ...); generating a first correction (1520 in Figure 10); modifying $X1$ with the correction to produce a fixed-point value $X2$ (output of 1520 as updated quotient in Figure 10); generating a fixed point approximation $X3$ of a value $X2+(2*Q)$, wherein Q is a second fixed-point quantization parameter (e.g. 434 in Figure 3A as 8, 16, ...); generating a second correction; and modifying $X3$ with the correction (feedback system for further defined).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 29 is rejected under 35 U.S.C. 103(a) as being obvious over Wheeler et al. (U.S. 5,825,680), as applied to claim 1 above, in view of Juri et al. (U.S. 5,329,475)

Re claim 29, Wheeler et al. do not disclose the X is based on an audio sample.

However, Juri et al. disclose the sample is based on an audio sample (col. 1 lines 10-15 and 35-40). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to add the input sample from an audio source as cited in Juri et al.'s invention into Wheeler et al.'s invention because it would enable to enhance the digital system by efficiently quantizing signal.

Allowable Subject Matter

8. Claim 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. Claims 4-14 and 19-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. U.S. Patent No. 6,658,161 to Chen et al. disclose a signal-processing method and device therefore.

b. U.S. Patent No. 6,112,218 to Gandhi et al. disclose a digital filter with efficient quantization circuitry.

Art Unit: 2124

c. U.S. Patent No. 5,748,793 to Sanpei discloses a quick image processor of reduced circuit scale with high image quality and high efficiency.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do
Examiner
Art Unit 2124

September 29, 2004

Kakali Chaki
KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100